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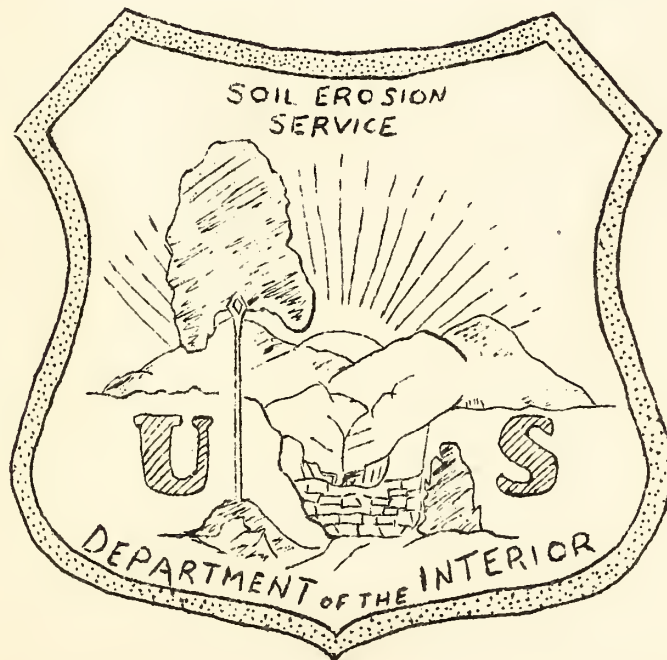
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U. S. Department of Agriculture

CROOKED CREEK CRIER



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PROJECT 29
INDIANA , PENNSYLVANIA

OFFICE OF THE

SECRETARY

STATE OF OHIO



BY THE SECRETARY

JOHN W. WATKINS, Secretary

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" CROOKED CREEK CRIER "

Published periodically at Indiana, Pennsylvania by the SOIL EROSION SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

Dr. Austin L. Patrick, Regional Director

Editor -- Richard E. Grabe

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No. 1

OUR COUNTY'S OPPORTUNITY

I was personally very much pleased to have the Soil Erosion Service select a part of Indiana County and Armstrong County for the demonstration area involving some 800 farms. I know that Sam Shenk, County Agent in Armstrong County is of the same opinion.

I have long realized the great loss of soils from sheet erosion and also gully erosion in this section of the state. The losses are much greater than the average person realizes.

The program of the Soil Erosion Service in this area is very sensible. Farming in alternate strips on the contours of the hills, improving the water-holding capacity by improving our pastures, planting strips of forest trees on some of the steeper slopes, and improving the water-holding capacity of our soils by less plowing and cultivation are measures which a few of the better farmers have already adopted.

This huge demonstration will be watched by farmers from all sections of Pennsylvania and is bound to attract attention to the devastating soil losses occurring annually, and point to the methods of prevention.

The soil is the farmer's bank account. Any measures which are adopted to conserve soil fertility are sure to improve the farmer's income and standard of living.

John W. Warner
John W. Warner, County Agent
Indiana County

MESSAGE FROM THE REGIONAL DIRECTOR

The Secretary of the Interior, Harold L. Ickes, announced some time ago that a soil erosion project to be known as the Crooked Creek Project was to be located in this section. It includes those portions of Indiana and Armstrong Counties drained by Crooked and Plum Creeks from their headwaters down as far as the junction of the two streams. Approximately 120,000 acres of land and 900 farms are in this watershed.

The aim is to set up in this area an ideal erosion control demonstration to serve as an example, not only to farmers in this immediate vicinity, but to those located throughout west central Pennsylvania. The soil types, extent and nature of erosion, types of farming, and degree of slopes which prevail in this watershed are similar to those which prevail over thousands of acres of farm land in the State. Another reason for selecting this particular location was that the people enjoy the reputation of being a freindly cooperatively-minded group. The hearty response of those who really understand our program have led us to believe that we have selected wisely. When our plans are fully understood we feel confident that every farm operator and owner will wish to be counted among the cooperators.

Everyone knows of the damage caused by gully erosion for it is so very evident. Sheet erosion is not as noticeable, for this type of washing removes soil particles layer by layer. It does not interfere with cultivation and often the man who farms the land fails to realize that tons and tons of his best soil is escaping. He may wonder why his fields contain so many more stones each year or why he fails to obtain the good yields he once obtained. Many men are farming subsoil without being conscious of the fact. Subsoil farming is an expensive process which yields no profit. So many acres, once productive in this state, have been destroyed and it is high time for something to be done to prove that such a waste of our most valuable asset need not continue.

The various members of the staff, who are to help put into effect the Crooked Creek demonstration, have been selected. Each has been chosen because of his training and experience. Each department head has outlined briefly in this, our first message, the plans for carrying out the part of the program with which he is charged.

Our offices are located in the Municipal building in Indiana. We wish to extend a cordial invitation to each farm operator and owner to visit us and learn more about our plans. Any member of our staff will be glad to talk with you. Our contact men will probably be of the greatest help. They are located in the part of the Municipal building known as the Band Room. When in town come in.

CONTACT DEPARTMENT

The Contact Department is the connecting link between the Soil Erosion Service and the farms of the Crooked Creek Watershed. In order that the Soil Erosion Program may serve its purpose in the largest sense, it must be translated into definite action on the farm. There should be complete understanding and a generous spirit of cooperation without which no enterprise can succeed. We have been most fortunate in securing hearty co-operation in this area, not only from farmers whose land is involved, but also from local business and professional men, newspapers, etc.

A series of district meetings were held during February at vantage points throughout the watershed. These places included Indiana, Parkwood, Shelocta, Gaibleton, Marion Center, Plumville, Willet, and Atwood. The total attendance at these meetings was over a thousand persons. Lantern slides and charts supplemented the explanatory talks presented by the Regional Director and Chief Contact Man.

Cards were distributed at these meetings and signed copies have been received from over 150 farmers, involving approximately 20,000 acres. Filling out these cards does not obligate the farmer but is merely an evidence that he is interested. The card is an invitation to the Soil Erosion Service to make an erosion map of his farm. This map will be used as a basis for an erosion control plan which will be presented to the farmer for his approval. A card must be signed before the technical men will begin an erosion survey of a man's farm and anyone interested who has not yet received a card may get the same at our office.

This Department will explain to the farmer the program of the Soil Erosion Service and how it will function on his own farm. We will go over his farm with him using the map prepared by the soils department; and, in each field, considering the slope, amount of erosion, kind and quality of vegetation, etc., decide on the practices that should be followed in order to reduce erosion to the minimum. The chief features of this farm program are: reforestation, putting back to grass, strip cropping, good farming methods, contour furrowing, etc.

All cooperators will be asked to enter into five year agreements with the Soil Erosion Service certifying their intentions to follow, to the best of their ability, the erosion control program as worked out. Cooperators will be asked to furnish as much as they can of the labor and material required to do an efficient job. The Soil Erosion Service in turn, agrees to furnish: technical direction, supply heavy mechanical equipment, where needed, forest tree seedlings, lime, fertilizer, seeds, supplemental labor and other materials necessary to control erosion on the farm as provided for in the agreement.

----- John A. Brenneman

SOIL INVENTORY

THE BASIS FOR EROSION CONTROL

The first step in a program to control erosion, before any attempts are made to suggest changes in farm lay-outs or farming methods is to prepare a complete inventory of the present condition of the land. The soils division is responsible for this inventory. A man who has been trained in soils and soil mapping will visit each farm and make a detailed map showing the soils, present land use, steepness of slope, and amount of erosion.

The base maps on which this information will be shown are photographs taken from an aeroplane flying at a height of more than 2 miles. These photographs alone show a great deal of information. Roads, buildings, fields and woodlots are easily seen and identified. Many landowners will be interested in seeing a picture of their farm, taken from the air. Present plans provide for enough of these photographs to include a picture of the farm with the farmers copy of each cooperative agreement.

The aerial photograph, however, is only the base map on which each field will be outlined. An auger will be used to examine the soils, learning the color and texture of the surface soil, the character of the subsoil, and other features of the soil profile. By comparing the surface soil in wooded and in cultivated areas, the amount of surface soil that has been lost from each field will be estimated. A hand level will be used to measure the percent of slope. Boundary lines will then be drawn on the map to show every area large enough to be considered in land use plans. Each of these conditions of soils, present land use, slopes, and erosion will be shown on the map by a symbol.

After a farm map is completed, copies will be prepared for the use of the contact men. These men, in discussing each individual farm with the owner or operator, will have before them a complete picture showing the fields, the soils, the slopes and the amount of erosion. All treatments to be used on the farm, and all changes in the farming system that are suggested, will be based on the adaptations of each individual field. In all recommendations the correct use of land is the major aim.

----- J. Gordon Steele

FORESTS, WATER AND SOIL CONSERVATION

It is unnecessary to defend the statements that, under natural forest conditions little or no soil erosion takes place and maximum water conservation is attained. Experiments and observations have repeatedly proven this fact.

Under natural or virgin forest conditions soil movement and loss proceed so slowly that thousands of years must elapse before the land surface is lowered a few inches. This is because the thick blanket of leaves, bark, twigs and other forest litter closely covers the soil; the crowns and trunks of the trees obstruct rapidly falling rain; and the soil is full of roots which enmesh and hold it in place.

Slowly, then by the action of many agencies such as chemical changes, earthworms, bacteria, and fungi, fertility is built up and maintained. The addition of organic material, chemical and physical changes, and the loosening up of the soil by roots, insects, and worms tends to increase soil porosity and water holding capacity. Under such conditions very little direct run-off occurs. Rain which reaches the forest floor slowly seeps thru the blanket of litter and decomposing organic material and is rapidly absorbed. Vast quantities are thus stored and held in reserve for plant and tree use or slowly released thru underground channels to appear as a rather regulated flow in springs and underground rivers. Because of this water retaining capacity of blanketed and porous forest soils, rapid loss of water does not occur, floods are reduced in number and extensity, and underground water supplies are maintained at a uniform level.

When a forest is disturbed by lumbering or fire, normal conditions are changed and erosion may occur. Fire, when it kills all trees and destroys the protective blanket of litter, is the most destructive agent. Under such conditions the exposed soils may erode rapidly until again protected by vegetation.

Lumbering can be carried on in such a way that disturbing factors such as reduction in crown cover and removal of the litter in skid trails and roads will not result in excessive erosion. Selective cutting (removal of occasional trees throughout the forest) causes the least disturbance and when properly practiced will result in forest improvement and assure greatest returns from the woodlands.

AGRONOMY AND SOIL EROSION

When man first cleared the forest and began cultivating the land he found a fertile top layer of soil from 6 to 8 inches deep. At first the land yielded abundant harvests. As time went on, however, yields of crops have shown a tendency to decline -- this process going on more rapidly in some areas than in others. It has been the problem of agronomy to help in stopping this decline on crop yields.

Through numerous experiments Agronomists have discovered many ways in which crops yields can be stimulated and sustained. Soil Erosion experiments have shown that the amounts of soil lost by erosion is influenced in large measure by the kind of crop, vigor of growth, and type and arrangement of rotation. For example a vigorously growing pasture practically prevents soil erosion while a crop like corn which does not cover the land well favors large losses of the surface soil. Where the land is not kept in a high state of fertility even pastures lose much of their ability to prevent washing of soil. A crop rotation which provides for too much acreage in row crops like corn is not as efficient in control of soil losses as one in which much of the acreage is kept in close growing crops such as hay and small grains.

With these brief facts in mind the Agronomy division of the Soil Erosion Service will assist in the following:

1. Working out crop rotations that will reduce soil losses to a minimum taking into consideration the individual farm needs.
2. Developing plans whereby crops can be grown in strips laid out across the slope.
3. Arranging the crops in the strips in a manner to conserve soil and water, at the same time to maintain and build up soil fertility.
4. Improving pasture land on slopes too steep for cultivated crops by thickening up the stand of desirable pasture grasses through application of lime, and fertilizer - reseeding where necessary.
5. Making studies of various sorts, which will not only uncover new facts but will aid in a greater application of present agronomic information for the control of soil and water losses.

In working out this program the Agronomy Division will have in mind at all times the main objective of the Soil Erosion Service. All work will therefore be done with a view of not only controlling soil losses and conserving water falling on the land, but also of reversing this wasteful soil erosion process which has gone entirely too far in many sections of Pennsylvania.

----- John P. Jones

ENGINEERING

The more important phases of the long time Soil Erosion program outlined by the Soils, Forestry and Agronomy divisions will need supplementing at the beginning and from time to time by certain types of structures. The planning, designing and laying out of these types of erosion control measures will be done by the engineering division.

Dam structures, diversion ditches, headers to prevent further lengthening of gullies, and bank sloping will be the principle means used in controlling gullies. Contour furrowing, measures to prevent stream bank cutting, and other control structures will be used where conditions warrant their use. Our part of the program will be closely co-ordinated with the more important vegetative control measures.

Results which are practical in the eyes of the farmer and the technician will be sought; and the design, use of materials and labor will be considered from the standpoint of effectiveness in relation to economy.

----- Alvin C. Watson

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C. C. C. Camp

Most of the actual labor required for the various control measures will be supplied by a Civilian Conservation Camp which will be transferred here shortly after April first.

The camp which is being sent here is the one now located in Allegheny County at South Park, near Pittsburgh. There will be approximately 150 boys in the camp, many of whom came from farms in Somerset County. The camp will be under the regular supervision of the U. S. Army. It is anticipated that Captain Wm. G. Wharry, the present head of the camp, will be transferred with the boys. Erosion Officials from this office inspected the camp in its present location and were very favorably impressed.

The local camp site selected is an eight acre tract on the Kinter farm, one mile east of Gaibleton. The site is considered very desirable from every angle. It is located on a "Pinchot" road (Pa. Route 110), about ten miles from Indiana, and is about 800 feet north of Crooked Creek. It will be easily accessible in all kinds of weather, is centrally located in regards to the area in which the erosion control work will be done, and is ideal from the standpoint of health and sanitation.

THE USE OF FARM MANAGEMENT
IN THE
EROSION CONTROL PROGRAM

The success of the Soil Erosion Control Program will be judged by farmers from the standpoint of farm returns. These returns should be increased if the support and cooperation of the individual farmer is to be expected. The program is aimed primarily at soil and water conservation. For this reason, the most outstanding results will not be within the first year or two, but will consist of a permanent maintenance or building up of soil fertility.

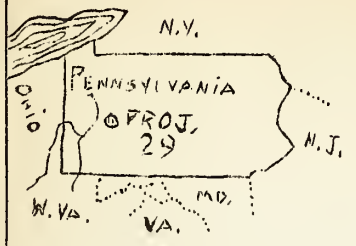
Of almost equal importance to conservation on labor income is the proper organization and practices within each farming unit. The proper use of fields, the efficient use of labor, and the best possible crop rotations are some of the factors that have a decided effect upon net returns. Any improvement that can be brought about will certainly result in an immediate and long time benefit to the farmers.

In order to obtain desirable information about farming in the area it is hoped a detailed labor income record may be obtained on 500 farms in the watershed when the project is started. These records will include crops and livestock grown, and the important farm practices. An experienced enumerator will make a personal call at each farm to obtain the desired information.

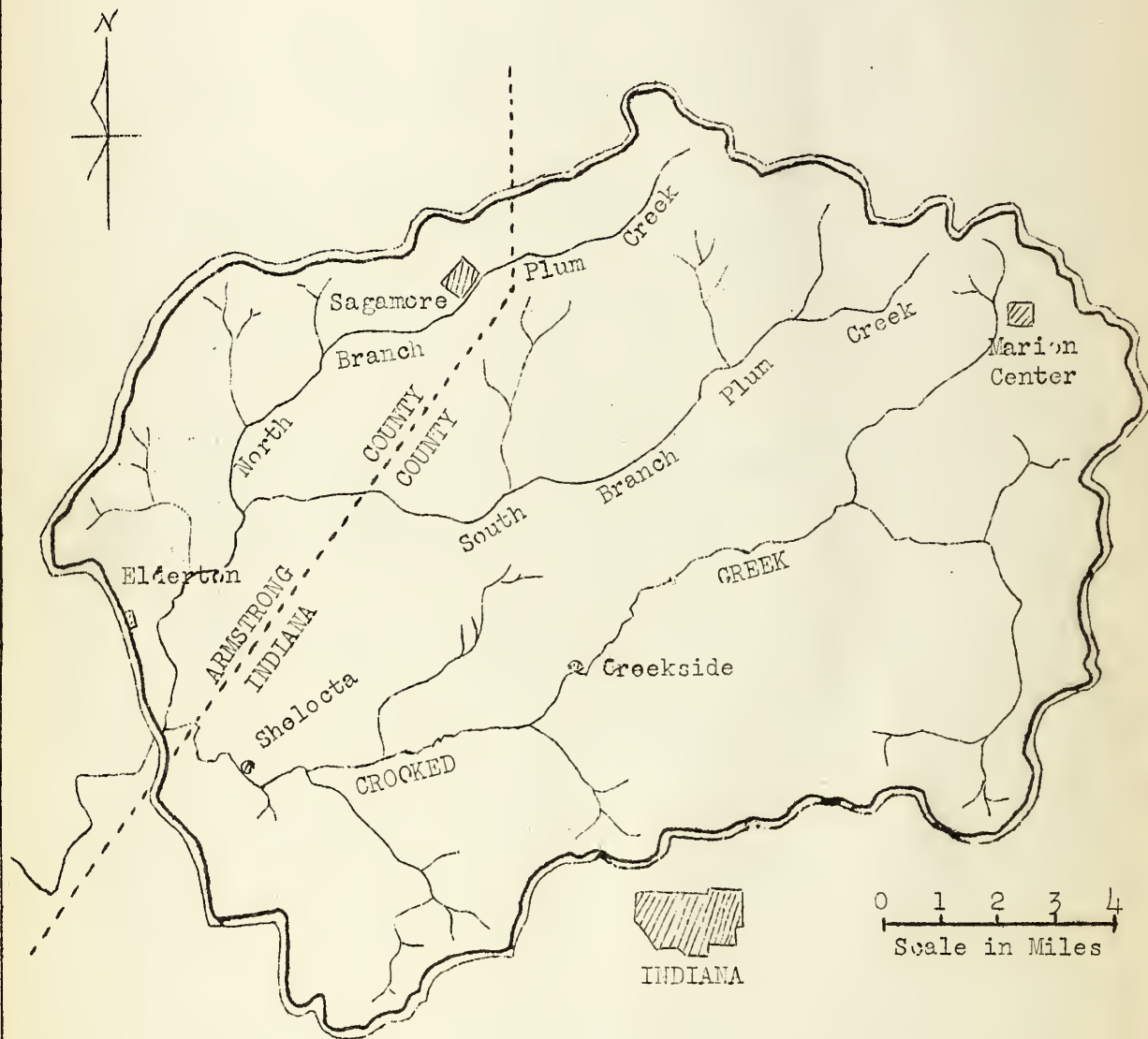
These records will be helpful in several ways. They will be used in educational work among the farmers. A complete analysis of each farm business will help the contact men on the project to make suggestions to the operator and to avoid making any serious mistakes when replanning any part of the farm project. Probably the most important use of the survey will be to measure the success of the program. It is hoped that in about five years, a similar survey will be made on the same farms. Changes in labor incomes, farm practices and many other factors over the five year period can then be compared. It will be possible from various other studies to check rather closely whether changes are due to the program or from other causes.

This "Farm Management Survey" should not be confused with the "Agricultural Census" now being taken by the Census Bureau. These two matters are distinctly different. The Farm Management enumerators will begin gathering this information as soon as the questionnaires are returned from the printer. The figures obtained for individual farms will be kept strictly confidential. Any publication of this information will be in the form of totals for districts, average for the area, etc. The co-operation of all farmers is respectfully requested.

----- David H. Walter



MAP OF CROOKED CREEK EROSION CONTROL PROJECT NUMBER 29



- LOCATION -- Armstrong and Indiana Counties, Pennsylvania.
- AREA -- Approximately 120,000 acres.
- FARMS -- Approximately 800 in area.